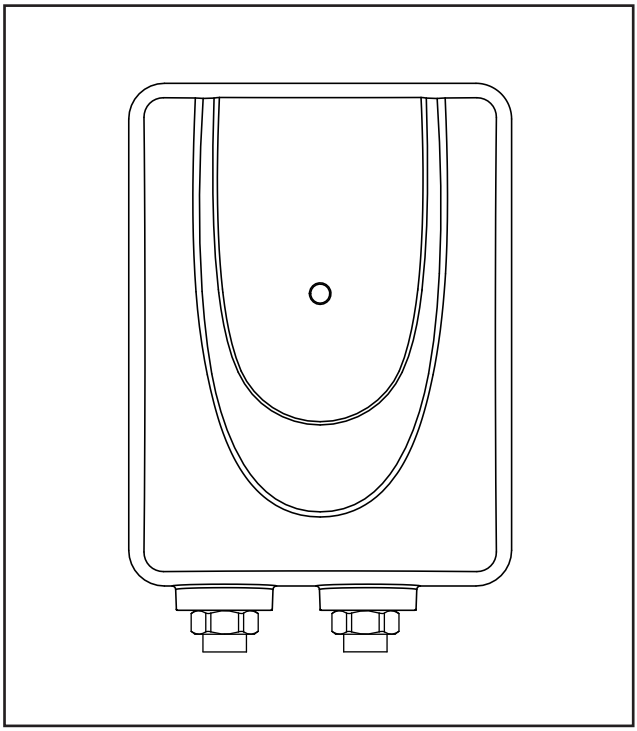
MAREY
HEATER CORP.

Installation and User Instructions
POWER PACK



Please read and understand these instructions before starting work.
Please leave this leaflet with the user following installation

WARNING
This Power Pack must only be installed by qualified persons.

36006058 Issue 01.

INTRODUCTION

Thank you for purchasing a Santon Power Pack. The Power Pack unvented pressure system water heater is manufactured to the highest standards and has been designed to meet all the latest relevant safety specifications.

This Power Pack water heater must be installed (Sections 3.0-6.0), commissioned (Section 5.0) and maintained (Section 7.0) by a competent person. Please read and understand these instructions prior to installing your Power Pack unvented pressure system water heater. Particular attention should be paid to the section headed SAFETY (section 2.0).

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

PACK CONTENTS

Heater
Fixing screws and plugs
Pressure relief valve 0.85MPa (8.5bar)
Installation and User Instructions

TECHNICAL SPECIFICATION

CONNECTIONS
Inlet / Outlet connection -1/2" BSP
Water entry point - bottom
Cable entry point - bottom/rear
ELECTRICAL
Model numbers
7.0kW - 94 805 005
9.0kW - 94 805 006
Electrical rating.....6.4/7.0kW @ 230/240V
.....8.3/9.0kW @ 230/240V

MATERIALS

Back plate, cover - ABS

Element(s) - Copper sheathed rod type.

DIMENSIONS

Height - 210mm

Width - 160mm

Depth - 104mm

STANDARDS AND APPROVALS

Complies with the requirement of UL.

Complies with European Community Directives (CE).

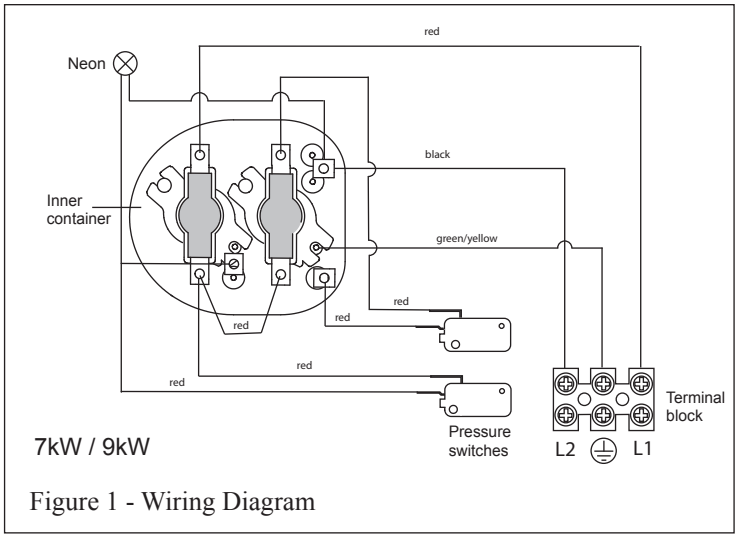


Figure 1 - Wiring Diagram

MODEL	TEMPERATURE RISE AT FLOW RATE IN U.S. GALLONS							A.C. ONLY			
	0.5 GPM	0.75 GPM	1.0 GPM	1.5 GPM	2.0 GPM	2.5 GPM	3.0 GPM	WATTS	VOLTS	AMPS	WIRE SIZE
94 805 005	95°F	63°F	47°F	31°F	23°F	19°F	15°F	7000	240	29.2	8AWG
94 805 006	123°F	82°F	61°F	41°F	30°F	24°F	20°F	9000	240	37.5	8AWG

AVERAGE COLD WATER TEMPERATURE SUMMER 80°F WINTER 70°F. OUTLET TEMPERATURE EQUALS INLET TEMPERATURE PLUS TEMPERATURE RISE. TEMPERATURE RISES ARE BASED ON kW LOADING AT 240 VOLTS ARE SHOWN ABOVE. TEMPERATURE RISES IN EXCESS OF 110°F ARE NOT RECOMMENDED

LOW VOLTAGE EXAMPLE

A reduction in input voltage will result in a reduction in temperature. Model 94805005 connected to a 220 volt supply with a flow rate of 0.75 GPM will result in a 53°F temperature rise instead of a 63°F temperature rise. To increase temperature, reduce water flow rate

1.0 INTERNAL COMPONENTS

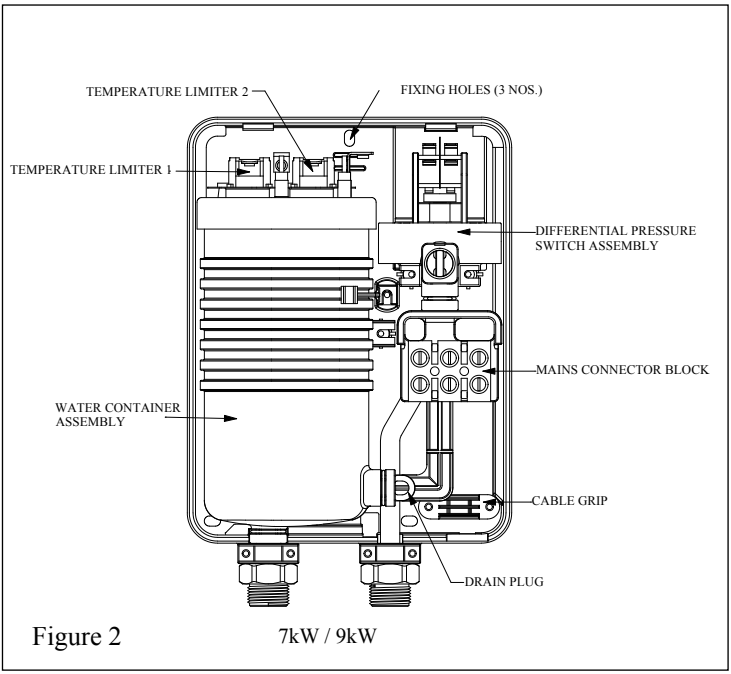


Figure 2 7kW / 9kW

2.0 SAFETY

IMPORTANT INFORMATION

2.1 Products designed by Santon are to British and European and UL Standards. These appliances are safe and without risk, provided they are installed, used and maintained in good working order in accordance with our instructions and recommendations.

2.2 Please read and understand these instructions before starting work and retain them for later use.

2.3 DO NOT operate the appliance if it is frozen, or suspected of being frozen. See fault finding table.

2.4 These heaters are of the closed outlet type (unvented pressure system) and are suitable for connection to normal cold water mains supplies up to a maximum of 0.5MPa (5bar)

2.5 DO NOT operate the appliance if:
1. Water ceases to flow during use.
2. Water has entered inside the unit because of an incorrectly fitted cover.
3. If the appliance is damaged.

2.6 ISOLATE the electrical and water supplies before removing the cover.

2.7 ISOLATE the electrical and water supplies BEFORE proceeding with installation or servicing.

3.0 SITE REQUIREMENTS

WATER REQUIREMENTS

3.1 The heater must be connected via the **pressure relief valve** to a cold supply having a minimum pressure of 0.1Mpa (1bar) and a maximum of 0.5Mpa (5bar). Both inlet and outlet connections are suitable for 15mm diameter copper pipe. Outlet pipe from unit may reduce to 10mm diameter to improve performance.

3.2 The tee piece and pressure relief valve must be situated where shown and the relief valve discharge port plumbed via an air break (tundish) to a safe, visible place where there is no risk from hot water to persons using the building.

3.3 The discharge pipe must fall continuously from the valve outlets and be unobstructed.

3.4 The provision of a service stop valve in the cold supply pipe will assist in the event of any subsequent servicing or maintenance.

3.5 To obtain optimum performance a flow restrictor must be fitted where shown (see figure 3). This provides the user with the means to govern the flow (and therefore temperature which is dependent upon flow) at the outlet (see under SETTING FLOW RATE).

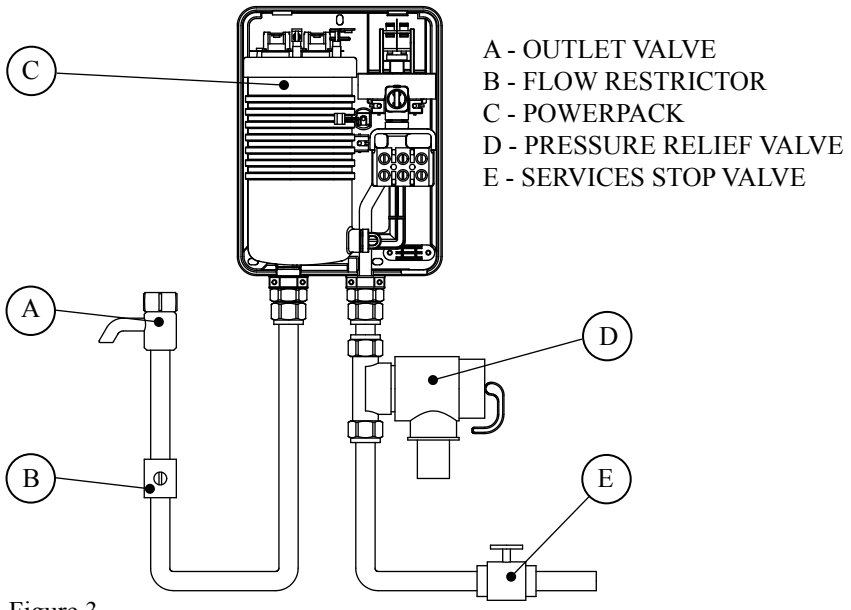


Figure 3

ELECTRICAL REQUIREMENTS

3.6 **This appliance must be earthed.**

3.7 The installation must comply with national/local code of practices and Electricity Supply Authorities requirements. All rules and requirements must be strictly followed to safeguard against the hazards affecting life and property during and after installation of this product and during subsequent servicing and maintenance.

3.8 The Power Pack heater must only be connected to a 230/240V ac supply.

3.9 Before making any electrical connections within the installation, make sure that no terminal is live. If in doubt, SWITCH OFF the whole installation at the consumer unit or switch fuse (where fitted).

3.10 The Power Pack heater must be connected to its own independent electrical circuit.

3.11 It is a requirement that the branch circuit protection should be 40A for 7kw Power Pack and 50A for the 9kw Power Pack.

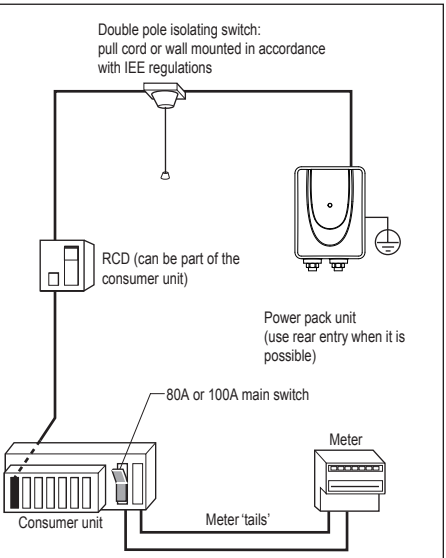


Figure 4

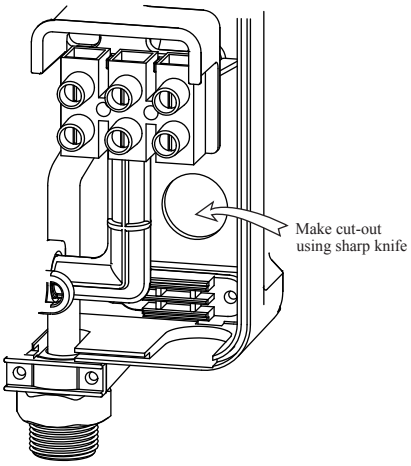


Figure 5 - Rear cable entry

4.0 CONNECTING TO SERVICES

PREPARATION

4.1 Remove the fixing screw which holds the front cover onto the back plate of the Power Pack heater. Carefully remove the cover.

4.2 The unit must be mounted on a flat surface, which covers the full width and length of the back plate. It is important that the wall surface is flat otherwise difficulty may be encountered when fitting the cover.

4.3 DO NOT fit the Power Pack to the wall and tile up to the case. It must be fitted on to a finished flat and even wall surface. This allows removal for servicing.

CABLE ENTRY

4.4 Cable entry can be from the rear (preferred see Figure 5) or from the bottom. When opting for bottom entry make cut-out to suit cable before fitting back plate to the wall.

4.5 Fix the Power Pack heater loosely to the wall. The wall plugs provided are suitable for most brick walls (use a 6.5mm diameter masonry drill), but if your wall is plasterboard or soft building block, you should use special wall plugs and an appropriate drill, obtainable from most hardware stores.

PLUMBING

4.6 The Power Pack should be fitted as close as possible to the point to be supplied, ideally within 4/5 feet as the length of the outlet pipe effects the initial temperature from the outlet. If used to supply a shower, the Power Pack must be installed outside the shower cubicle or shower room.

4.7 Decide where to connect to the water mains for your feed to the Power Pack. Ensure that the pipe you have selected is not a gas pipe or a hot water pipe or from a cold water storage tank.

4.8 Cut the necessary pipe work to length, assemble and offer up to the installation before making any soldered joints. Ensure that the pipe is the correct length, as shortening it can be difficult once joints have been made.

4.9 An isolating stop valve MUST be incorporated to the main water supply to comply with Water Regulations

4.10 Assemble the installation before making any soldered joints to ensure that the pipe is the correct length. DO NOT use jointing compounds on any pipe fittings for the installation.

4.11 Remove the unit before soldering the connections.

4.12 It is essential to flush the pipe in order to clear debris, particles of solder and swarf.

4.13 Turn the water off after flushing using the isolating stop valve.

4.14 Connect the cold water supply pipe to the inlet of the Power Pack, this is a 1/2” BSP connection.

4.15 Fit top and bottom screws and secure the back plate to the wall ensuring that it is level.

4.16 Connect all other components as per Figure 3.

4.17 Turn the isolating stop valve on slowly and check for leaks in all pipe work, rectify as necessary.
4.17 Turn off the isolating stop valve.
4.18 Place the cover onto the back plate.
4.19 Secure the cover to back plate using screws provided.

5.0 COMMISSIONED

5.1 Once installed, the heater will operate automatically when the outlet valve is opened. The valve must be opened fully to obtain the set flow/temperature. Reduced flow at the outlet will result in hotter water being delivered.
5.2 On closing the outlet valve the heating element will automatically shut down once flow is reduced to a small amount.

SETTING FLOW RATE

5.3 It is important to note when setting the flow rate/temperature that 118°F is the point at which the average person cannot hold his or her hand under a stream of water. Under most circumstances water temperature need not be higher than this and it is recommended that this temperature is not exceeded.
5.4 These heaters will supply only one outlet at any time and must be controlled by a single outlet valve. DO NOT USE WITH MIXER VALVES.

6.0 MULTIPLE INSTALLATIONS

6.1 When larger volumes of water are required than can be provided by one heater, multiple installation can be made by connecting a number of heaters in PARALLEL of the cold feed manifold (See Figure 6). This is the ONLY method that is recommended. DO NOT plumb these heaters in series.

6.2 To set the heaters in this arrangement use the appropriate procedure as described previously. Each heater in parallel must be set individually.

6.3 In this application restrictors capable of closing flow completely should be used so that as each heater is set in turn, the other heaters in the installation may be isolated.

NOTE - In this application it is advisable especially where low flow rates exist to plumb the cold manifold in 22mm pipe with 15mm pipe spurs to each heater.

B - RESTRICTORS
D - PRESSURE RELIEF VALVES
E - SERVICE STOP VALVE
F - COLD WATER SUPPLY MANIFOLD
G - HOT WATER SUPPLY MANIFOLD

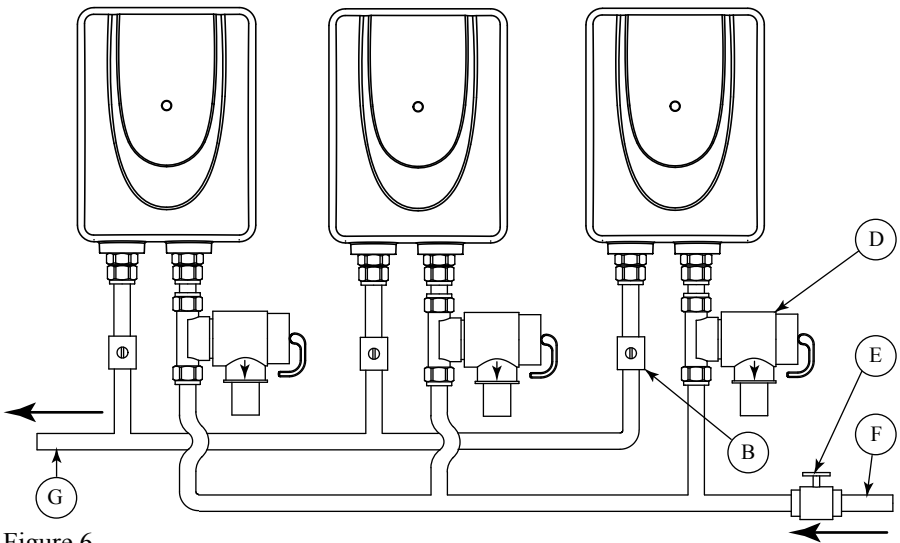


Figure 6

7.0 FAULT FINDING

YOUR MAREY POWER PACK SHOULD GIVE TROUBLE FREE OPERATION, HOWEVER SHOULD A FAULT OCCUR THE TABLE BELOW SHOULD ALLOW MOST FAULTS TO BE IDENTIFIED. FAULT FINDING SHOULD ONLY BE CARRIED OUT BY A COMPETENT PERSON.

SYMPTOM	POSSIBLE CAUSE	REMEDY
1. Water too hot	A. Water flow too low	Increase the flow by turning the water control
2. Water too cold	A. Electrical power to the power pack heater is off	Ensure that the electronics to the power pack is switched on and the neon is lit
	B. Water flow too high	Reduce the flow by turning the water control
	C. Element fault	Check for open circuit
3. Temperature varies while showering, cycling hot/cold	A. Pressure switch is operating, normally making a "click" as it does so	Water pressure/flow issue
	B. Input pressure is below 1.0 bar (14.5psi); flow is not stable	Ensure that your stop cock and servicing valve are opened fully
4. "Power on" indicator not lit. Isolating switch "ON" but its neon not lit	A. Cartridge fuse or miniture circuit breaker (mcb) has operated in your fusebox (or consumer unit) or switch fuse	Switch off shower and isolating switch. Renew fuse, reset the mcb. If they operate a second time, contact a qualified electrician
	B. Residual current device (rcd) or (earth leakage circuit breaker) has operated	Follow the same procedure as above. If this has happened with a "split load" consumer unit on initial installation, check that the neutral core of the power pack feed cable is connected to the "protected" neutral bar of the unit
5. Water emerges from pressure relief valve	PRV has operated	1. Switch off immediately at isolating switch 2. Turn water off at the servicing valve (if fitted) or stop valve 3. Contact Marey Service Department

8.0 SPARE PARTS

The following comprehensive list of spare parts is available for your Santon Power Pack. Please refer to the rating label on the side of your heater before ordering to ensure the correct spare part is obtained.

DO NO REPLACE WITH PARTS NOT RECOMMENDED BY SANTON, AS THIS WILL INVALIDATE YOUR GUARANTEE AND MAY RENDER THE INSTALLATION DANGEROUS.

DESCRIPTION	CODE NO.
1. Heat Exchanger Assembly 7.0kW	95 606 965
Heat Exchanger Assembly 9.0kW	95 606 966
2. Temperature limiter 1	95 612 035
3. Temperature limiter 2	95 612 036
4. Pressure Differential Switch Assembly	95 613 004
5. Power Pack Cover	95 614 107
6. Neon Assembly	95 615 058
7. Inlet Boss Assembly	95 607 106
8. Outlet Boss Assembly	95 607 109

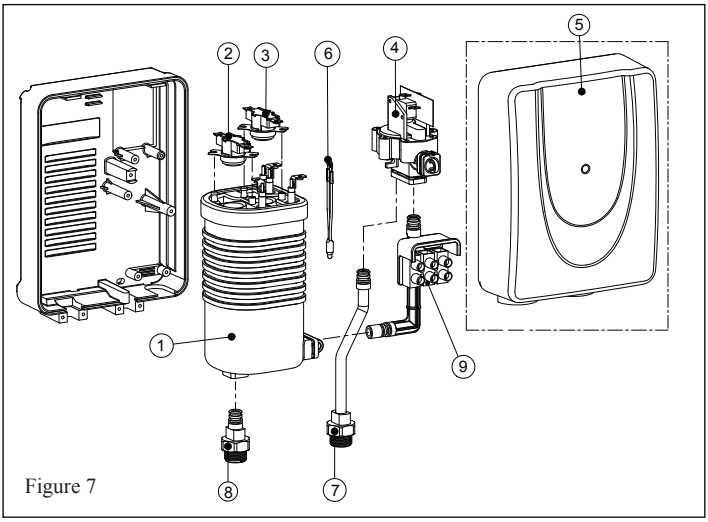


Figure 7

9.0 Warranty

The Seller will make good by repair, or at his option by the supply of a replacement, defects which, after proper installation, appear in the goods within a period of twelve calender months after the goods have been delivered and arise solely from faulty design, materials or workmanship. Provided always that defective parts are promply returned by the User free to the Seller`s Premises unless otherwise arranged. The repaired or new parts will be delivered by the seller.

Provided further that in respect of parts or components not of the Manufacturer`s manufacture the Seller will give the User a guarantee equivalent to the guarantee (if any) which the Manufacturer may have received from the supplier of such parts or components in respect thereof, but not so as to impose on the Manufacturer of such parts or components a liability greater than that imposed on him by the proceeding paragraph.

Save as aforesaid the Seller shall not be under any liability in respect of defects in goods delivered or for any injury, damage or loss resulting from such defects, and his liability under this guarantee shall be in lieu of any warranty or condition implied by law as to the quality or fitness for any particular purpose of such goods.

This warranty in no way affects the statutory rights of the consumer.

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